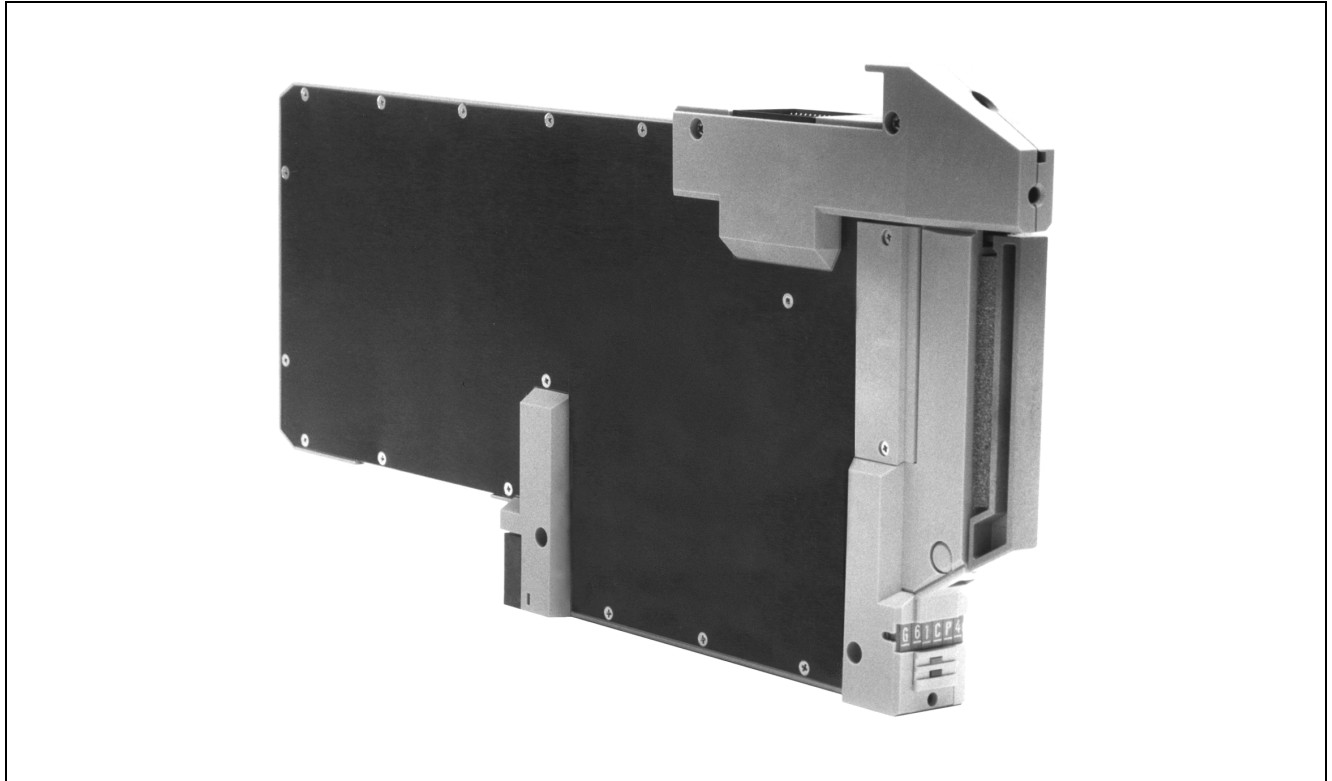# FOXBORO®

# I/A Series® Hardware
# INTERSPEC™ Integrator 30, Style B



The INTERSPEC Integrator 30, Style B is a station on an I/A Series system that allows the integration of INTERSPEC process data into I/A Series databases. The Integrator provides data access and control functions on an I/A Series network with process data provided by the devices connected via the INTERSPEC network.

The Integrator 30 connects an INTERSPEC network with up to 16 INTERSPEC serial devices, i.e., Analog Input Module (AIM), Controller Communication Module (CCM), Universal Field Multiplexer (UFM), and Universal Input/Output Module (UIO), to an I/A Series system. The process data provided by these INTERSPEC devices is the same as process data provided by I/A Series Fieldbus Modules (FBMs) and is incorporated into I/A Series based plant management functions and operator displays.

The Integrator 30 adheres to standard I/A Series conventions for process control, block configuration, peer-to-peer and Object Manager connections, interprocess communication (IPC) connections and communications.

The features of the INTERSPEC Integrator 30 include:

- High performance interface to INTERSPEC devices

- Integration of data from up to 16 INTERSPEC serial devices (AIM, CCM,UFM,UIO) on the INTERSPEC network

- Standard I/A Series Communication Processor 30 hardware

- Support for standard I/A Series alarm functions

## Invensys™

Product Specifications

• Support for the following standard I/A Series block types for both continuous control and sequential control:

| BIAS | IND | PIDXE |
|------|------|--------|
| CALC | LIM | PTC |
| CHARC | LLAG | RAMP |
| DEP | MON | RATIO |
| DGAP | PID | SIGSEL |
| DTIME | PIDE | SWCH |
| EXP | PIDX | TIM |

• Support for the following INTERSPEC specific control blocks:

| IAIN | ICOUT | IOSL |
|-------|--------|--------|
| IAOUT | IMCIN | IRATIO |
| IBIAS | IMCOUT | IRSOL |
| ICIN | IMLS | |

## FUNCTIONAL SPECIFICATIONS

The Integrator 30 communicates with INTERSPEC devices via an INTERSPEC Integrator Translator (IIT) (shown in Figure 1) and RS-232-C serial data link as shown in Figure 2. The Integrator has two RS-232-C interface I/O ports.
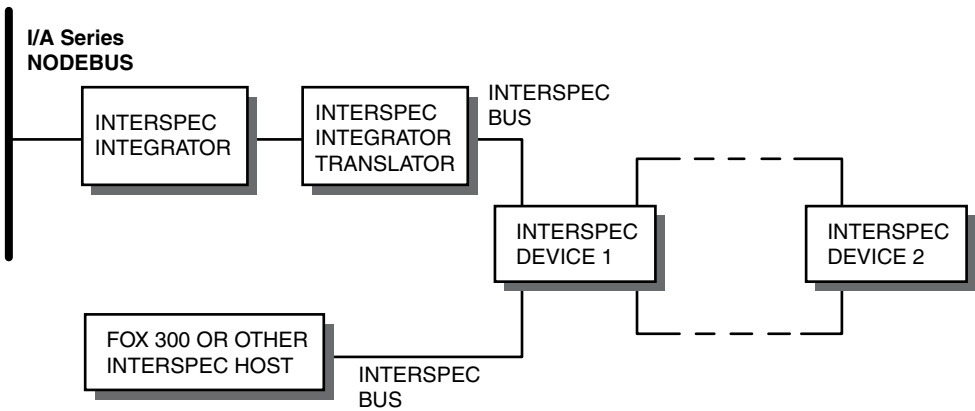


Figure 1. INTERSPEC Integrator Translator (IIT)



Figure 2. Typical INTERSPEC Integrator 30 Configuration

The inteGrator interfaces with various INTERSPEC devices and executes the INTERSPEC specific blocks as well as standard control blocks. In addition to communication indicators, the IIT contains a power supply with a flunk switch used to flunk all INTERSPEC stations connected to the INTERSPEC bus.

### Alarm Functions

The Integrator 30 fully supports I/A Series alarm functions. The following blocks are used:

> BLNALM
> PATALM
> REALM

Alarms are read from the INTERSPEC devices and reported to the I/A Series operator via the alarm logging devices as configured in the Integrator compound/block database. All alarms (process and system) are acknowledged from specific I/A Series displays. To allow for the dynamic suppression of selected alarms from the I/A Series workstation, the priorities and inhibit parameters of alarms are specified during block configuration.

### System Management Support

The System Health displays for the Integrator show the Integrator as a control processor, the INTERSPEC devices (AIM, CCM, UFM, UIO) as Fieldbus Modules (FBMs), and the IIT as the primary ECB (ECBP). This feature allows the system engineer/operator to use the System Health displays to disconnect a failed INTERSPEC station or to restore communication to an INTERSPEC station.

### PACKAGING AND ARCHITECTURE

The hardware base of the INTERSPEC Integrator 30 is a single width Z-Module which connects to the Mounting Structure Bus to access the Nodebus and also connects to the INTERSPEC Integrator Translator via the RS-232-C link. Connections to the INTERSPEC bus are made via connections to cable connectors secured to the mounting structure that houses the IIT. The Integrator hardware architecture consists of the following:

- Multiple Processors
- Dynamic RAM
- Nodebus Interface
- Two interface I/O ports compatible with EIA RS-423/RS-232-C.

For enhanced reliability during maintenance operations, the Integrator 30 is equipped with a recessed reset button, located at the front of the module. This feature provides for manually switching module power off and on (for maintenance purposes) without removing the module from the enclosure.

### DIAGNOSTICS

The INTERSPEC Integrator 30 uses three types of diagnostic test to detect and/or isolate faults:

- Power-up self-checks
- Run-time and watchdog timer checks
- Off-line diagnostics.

Power-up self-checks are self-initiated when power is applied to the Integrator. These checks perform sequential tests on various Integrator functional elements. Red and green indicators at the front of the Integrator module reflect the successful (or unsuccessful) completion of the various phases of the startup sequence.

The run-time and watchdog time-checks provide continuous monitoring of Integrator functions during normal operations. The operator is informed of a malfunction by means of printed and displayed system messages.

Off-line diagnostics are run for the purpose of performing comprehensive tests and checks on various system station components. By using the off-line diagnostics, the operator can isolate and/or confirm a suspected fault in the Integrator.